

ART 34 AMT

**We claim:**

1. An ink jet printhead chip that comprises  
a wafer substrate,  
drive circuitry positioned on the wafer substrate, and  
a plurality of nozzle arrangements positioned on the wafer substrate, each nozzle arrangement comprising  
nozzle chamber walls and a roof wall positioned on the wafer substrate to define a nozzle chamber and an ink ejection port in the roof wall,  
a micro-electromechanical actuator that is connected to the drive circuitry, the actuator including a movable member that is displaceable on receipt of a signal from the drive circuitry, the movable member defining a displacement surface that acts on ink in the nozzle chamber to eject the ink from the ink ejection port, wherein the movable member of each actuator defines at least part of the nozzle chamber walls and roof wall so that movement of the movable member serves to reduce a volume of the nozzle chamber to eject the ink from the ink ejection port.
2. An ink jet printhead chip as claimed in claim 1 wherein the area of the displacement surface is between two and ten times the area of the ink ejection port.
3. An ink jet printhead chip as claimed in claim 1, in which the movable member of each actuator defines the roof wall.
4. An ink jet printhead chip as claimed in claim 1, in which each actuator is thermal in the sense that it includes a heating circuit that is connected to the drive circuitry, the actuator being configured so that, upon heating, the actuator deflects with respect to the wafer substrate as a result of differential expansion, the deflection causing the necessary movement of the movable member to eject ink from the ink ejection port.
5. An ink jet printhead that includes a plurality of inkjet printhead chips as claimed in claim 1.

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